In the claims:

Please amend claims 49 and 50 as follows:

49. The DNA according to claim 47, wherein the protein is a leucine rich repeat receptor like kinase and comprises a ligand binding domain, a proline box, a transmembrane domain, a kinase domain and a protein binding domain[, the ligand binding domain optionally being absent or functionally inactive].

claims entered by Fax

50. The DNA according to claim 48, wherein the protein is a leucine rich repeat receptor like kinase and comprises a ligand binding domain, a proline box, a transmembrane domain, a kinase domain and a protein binding domain[, the ligand binding domain optionally being absent or functionally inactive].

REMARKS

Paragraph 22 of the August 1, 2000 Office Action rejected claim 6 and 17 under §112 first paragraph, as not describing the subject matter of the claim in the specification in such a way as to enable one skilled in the art to which it pertains, or which it is most nearly connected, to make and/or use the invention. In particular, the Examiner states that claims 6 and 17 are broadly drawn towards a method of producing apomictic seeds comprising transforming any plant material with any nucleotide sequence encoding a protein which renders any plant cell embryogenic, wherein the sequence encodes a protein as recited in claims 6 and 17.

Applicants cancelled claims 6 and 17. In Applicants' Reply under 37 C.F.R. §1.111 dated November 28, 2000, claim 6 was replaced by new claim 63. Claim 63 depends from claim 61. Claim 61 is not directed to "any nucleotide sequence," but is limited to expression vectors containing the DNA sequence that encode particular protein sequences of claim 47 and as depicted in SEQ ID No. 3, SEQ ID No. 21, and SEQ ID No. 33. Since the claim 63 depends from claim 61, which is directed to a specific nucleotide sequence, not to any nucleotide sequence, Applicants respectfully submit that new claim 63 overcomes the Examiner's rejection under §112 as set forth in paragraph 22 of the 8/1/00 Office Action.

In paragraph 22 of the August 1, 2000 Office Action, the Examiner further stated that the specification does not provide any teaching demonstrating that a DNA encoding a LRR protein kinase which lacks a ligand binding domain may render a cell embryogenic, and lead to apomictic seed production in transgenic plants. In response, Applicants have amended claims 49 and 50, by deleting therefrom:

"the ligand binding domain optionally being absent or functionally inactive."

Applicants respectfully submit that removal of this language from claims 49 and 50 overcomes the Examiner rejection regarding the lack of enablement for the concept of rendering a cell embryogenic by a kinase having a binding domain optionally absent or functionally inactive.

Furthermore, Applicants point out that claims 49 and 50 depend from independent claims 47 and 48, respectfully. Independent claims 47 and 48 are as follows:

> 47. An isolated DNA comprising a sequence encoding a protein having the amino acid sequence depicted in SEQ ID No. 3, SEQ ID No. 21, or SEQ ID No. 33 or a protein having an amino acid sequence which is at least 90% similar thereto and which has kinase activity.
>
> 48. An isolated DNA comprising a DNA sequence having the sequence depicted in SEQ ID No. 1, SEQ ID No. 2, SEQ ID No. 20, or SEQ ID No. 32 or a sequence which is complementary to one which hybridizes under stringent washing conditions of 3x20 min in 0.5% SSC, 1% SDS at 65°C with said sequences and which encodes a protein having kinase activity.

Claims 49 and 50 are limited to one of the SEQ ID Nos. listed in their respective independent claims, and are not broadly drawn towards any nucleotide sequence. Applicants respectfully submit that new independent claims 47 and 48 and claims 49 and 50, which depend therefrom, have overcome the Examiner's rejection under § 112 as stated in paragraph 22 of the August 1, 2000 Office Action.

Claims 16-44 and 46 stand rejected under 35 U.S.C. 112, first paragraph. In response thereto, Applicants have cancelled claims directed to SEQ ID Nos. 22, 23, 24, 25, 26, 27, 28, 29, 30, and 31. The pending claims 47-82 are not directed to these SEQ ID Nos.

Thus, Applicants respectfully submit that rejections of the claims directed to SEQ ID Nos. 22, 23, 24, 25, 26, 27, 28, 29, 30, and 31 have been overcome.

The Examiner has further stated that it is not clear how one skilled in the art would make DNA that encode proteins having sequences that are substantially similar to those of SEQ ID Nos. 3, 21, and 33 or are complementary to sequences that hybridize to SEQ ID Nos: 1, 2, 20, and 32, and still retain the claimed property of rendering any cell embryogenic, and further stated that claims 25-28 encompass sequences which hybridize to the stated SEQ IDs at any stringency. In response, new claim 48 includes stringent conditions of hybridization. Support for the claimed stringent conditions is found on in the second paragraph of page 24 of the specification. Applicants respectfully submit that the stringent conditions of hybridization clearly define the sequences that fall within the parameters of claim 48. Furthermore, it is well within the ability of a person skilled in the art to determine which of the sequences that hybridize to SEQ ID Nos: 1, 2, 20, and 32 have kinase activity. Support is found in the specification in the second full paragraph of page 30, which describes autophosphorylation assays that are used to determine protein kinase activity. Thus, Applicants respectfully submit that the specification provides adequate guidance and direction to those skilled in the art to obtain claimed sequences that have kinase activity. Undue experimentation would not be required.

In view of the above amendments and remarks, it is submitted that the application is now ready for allowance. If any additional information is needed, the Examiner is invited to call the undersigned attorney at (919) 541-8614.

Respectfully submitted,

Bruce Vrana
Attorney for Applicants
Reg. No. 38,672
Phone No. (919) 541-8614

Syngenta
Patent Department
P.O. Box 12257
Research Triangle Park, NC 27709-2257

Date: March 28, 2001

Version With Markings T Show Changes Made

In the claims:

Please amend claims 49 and 50 as follows:

49. (Amended) The DNA according to claim 47, wherein the protein is a leucine rich repeat receptor like kinase and comprises a ligand binding domain, a proline box, a transmembrane domain, a kinase domain and a protein binding domain[, the ligand binding domain optionally being absent or functionally inactive].

50. (Amended) The DNA according to claim 48, wherein the protein is a leucine rich repeat receptor like kinase and comprises a ligand binding domain, a proline box, a transmembrane domain, a kinase domain and a protein binding domain[, the ligand binding domain optionally being absent or functionally inactive].